# What Is RTCA, Its Philosophy, and Its Relationship to IRE and Other Professional Societies?*

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LADIES and Gentlemen: You will agree that the position of your speaker is not to be envied. What is a dinner speaker for? Perhaps to edify but certainly to amuse. So what do you do when you are assigned a subject which must at all costs be protected from amusement?

Also, the other absolute requirement of a dinner speaker is brevity. Now look at this three-pronged subject that has been handed me. But there is hope. Once before I was asked to speak on "The RTCA, Its Progress and Influence." I disposed of the second half of that with one sentence: "The influence of an organization is proportional to the service it renders." This time, two of our three questions can be answered speedily.

The relationship of RTCA to IRE and other professional societies is the simple one of co-existence and collaboration. You see it in smooth operation on this very occasion. In the past we have had joint meetings with the Institute of Aeronautical Sciences, the Radio Technical Commission for Marine Services, the Institute of Navigation, as well as the Institute of Radio Engineers and a number of its professional groups. There is no duplication of objective or scope with these or any organization. The RTCA makes specific studies to seek out and eliminate any duplication of effort in technical activities.

In the present meeting we have the gratifying cooperation, not only of the IRE but also of the IAS (our hosts in this fine building), the ION (past president Herrick is moderator of Thursday's session), the AFCEA, and West Coast representatives of various organizations which are members of RTCA. The splendid collaboration of these people explains the unusually high quality of the program before us.

So much for the third part of our subject. As for the first part, What is the RTCA?—Ah, here you take a big gamble in asking me to speak, for I have demonstrated ability to talk hours on this. But I think it is sufficiently well known that RTCA is an association not of persons but of organizations, some 120 of them, for the purpose of making objective studies of national aviation problems, particularly those involving electronics, and producing recommendations upon them. RTCA is unique in having in its membership all bodies concerned in this field, including both industrial groups and government agencies. Representatives of these organizations are meeting here these next two days, as the RTCA Assembly, for basic discussions. RTCA does its work through technical committees and an Executive Committee. It has no enforcement power and conducts no propaganda. But all the agencies which do have powers of enforcement and implementation are included in its membership and participate in the preparation of the recommendations. As a result, its conclusions are, in fact, put into effect. Some of you are serving on its technical committees or as Assembly representatives. We welcome the increased West Coast interest and participation. Instead of going on to tell you more exactly what we are and how we work, and to illustrate by examples, I will merely say to those of you who don't already have the information that you can get it from our pocket-size green pamphlet, "RTCA, What It Is and What It Does."

Having now pruned off the first and the third prongs of our subject, I am glad to take this opportunity to say something about the remaining one, the philosophy of the RTCA.

As people look out upon the world today, they see frightening uncertainties and confusion. The emergence of great new impersonal forces is blunting confidence, sense of responsibility, and will power. The giant strides of technological progress have so far outstripped familiar methods of control that we are compelled to re-examine our methods of conducting our economy, our government, our society, indeed our private lives. The necessity to think scares people, and they listen to the ubiquitous prophets of doom. But they overlook the fact that, despite the difficulties, we are doing something about the onrushing problems. We are learning the hard way; we are advancing because we have to.

The enforced re-examination of our basic principles, morality, and philosophy, which so troubles so many people, is not destructive, but selective. We find which of our motivations are essential and which are ephemeral. We learn, more surely than we have known, that a complex society must pay heed to such principles as the golden rule, true democracy, mutual trust, honesty—instead of supposing, as many thoughtless people have done, that technological progress can free us from the consequences of eternal laws of conduct. That, by the way, is the error of dialectical materialism.

Why do I moralize in such general terms? Because

* Address presented at the IRE-RTCA dinner, Los Angeles, Calif.; April 5, 1955.

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today's aviation offers a unique contribution to the world in this very matter of replacing despair with hope. Second perhaps to the fruits of nuclear science, aviation progress is the symbol of the epic time in which we live. But most people do not remotely comprehend either (1) the revolution in our way of life which flying is bringing about, or (2) the extraordinary accomplishment represented in the vastly complicated web of technology and administration which makes it possible.

On the first point, the unnoticed air-age revolution, I suggest for your consideration that the retrospect of history may well show that the major event of 1954 had nothing to do with wars or rumors of wars, or of nuclear weapons, but was the arrival of air transportation as the major carrier of long-distance passengers. I have known only one man who ever had the temerity to prophesy that aviation would one day work a greater revolution than the automobile: it was Clarence Young, head of the Aeronautics Branch of the Department of Commerce at the time the airways were set up. Today many of us think that events will prove him right.

As to the second point, the extraordinary achievement represented by our flying establishment today, I will venture an extreme statement of my own. When you think of the speed, the diversity, and the complexity of modern airplanes: the tremendous forces required for their launching, flight, and landing; the sensitivity of flight to the violence and vagaries of weather; the reliability of the traffic control that permits great numbers of craft to use simultaneously the same skyways in zero visibility; and the precision and extent of the administrative and business mechanism operating all this, —it is not too much to say that those who operate today's aviation are partners in the most brilliant technical exploit in history.

The contribution this makes to our life and times, is not only a magnificant technical operation, but also the demonstration that even a great and severe challenge can be met when we put all our brains and our will into the response. If aviation, with its great difficulties, complexity and sensitivity, its extreme challenge to technical possibilities and human capacity—if such a thing as aviation can be mastered, then man can master any other force, however frightening.

Thus aviation makes its sociological contribution, not only in its visible success in freeing man from the shackles of space and time, but also in the activities behind the scenes that make the success possible. Those activities are an outstanding example of many people working together, held to their purposes by definite threads of cooperation.

Now, I think I can hear someone thinking: "When does he come down out of the wild blue yonder and talk about the RTCA?" Well, I am talking about philosophy, and am trying to express the philosophy that actuates those who work in the RTCA. I mean the implicit motivation, not the explicit rules of conduct given in by-laws or minutes of meetings. RTCA is one small element in the great network of instrumentalities and organizations and lives which are building the success of aviation; its methods and its efforts are harmonious with the basic principles upon which that success is built.

The rôle of RTCA is one that has to be played. Almost any good electronics engineer can design a good radio navigation system. But to determine all the implications of that system, and to get agreement of all concerned on that system, is something no one engineer, however brilliant, can do. This is the hard job, and the hard jobs are the ones that RTCA gets.

There is unique value in a mechanism for developing national agreements in a fast-changing technical field. It happens time and again that a solution which looks reasonable to one or several parties is found inadequate when examined by all parties concerned. Lost motion and inefficiency are, at best, hard to avoid in a complex, dynamic field. The utmost in coordination and cooperation is required. The habit and method of RTCA is to make each study objectively, seeking the technically best solution, rather than a solution by the method of compromise so necessary in many other types of organizations.

I am not saying that only RTCA can solve problems in this manner. But RTCA has developed a tradition, and in consequence a reputation, of objective study and of participation for the national rather than selfish interest, This tradition, plus the inclusion in RTCA of all parties, plus its lack of enforcing power, enable it to make a special kind of contribution to that philosophy of hope and progress which aviation offers to this poor old world.

In conclusion, another word about the relation between RTCA and IRE. As I said at the start, the relation is good, and is well exemplified here. It has been very gratifying to us on the East Coast to observe the fine cooperation which Admiral Horne, in his capacity of West Coast Technical Advisor to RTCA, has found among you people of the IRE and the other organizations whose representatives are participating. We are sincerely thankful to the Los Angeles Chamber of Commerce, and to the gentlemen whose names are listed on the program and their numerous unlisted co-workers for all their care and labor in arranging this outstanding meeting.

I speak for all of us in expressing appreciation to Charlie Horne himself for his leadership in this enterprise. You know, it might have been better if he, rather than I, had given this talk on RTCA philosophy. He not only had a strong voice in guiding RTCA through his service as Vice-Chairman and as member of the Executive Committee for several years, but simultaneously had the responsibility as CAA Administrator of implementing various of its recommendations. If that combination, in addition to distinguished naval and business careers, won't season a man and develop a philosophy, I don't know what will.